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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Erwin Hartmann

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LUCAS & MERCANTI, LLP
475 PARK AVENUE SOUTH
15TH FLOOR
NEW YORK, NY 10016

EXAMINER

PATEL, VISHAL A

ART UNIT

PAPER NUMBER

3676

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DELIVERY MODE

11/13/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/596,518	Applicant(s) HARTMANN ET AL.	
	Examiner Vishal Patel	Art Unit 3676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 5 and 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-11 and 13-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 4 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4, "a first radial fin" and "a second radial fin", unclear if applicant is trying to claim the same two radial fins of claim 1 or four radial fins. For examination purpose the claim is directed to two radial fins.

Claim 21, how can one have a second collection channel, when there is no first collection channel claimed.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Judge (US. 3,741,614).

Judge discloses a seal comprising a first deflector ring (e.g. 13) comprising at least first and second radial fins (fins that parallel to inner portion of 19) that are axially adjacent to one another; a second deflector ring (e.g. 19), the first and second deflector rings are arranged

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concentrically with respect to one another about a common axis of rotation and without contact with one another and wherein the radial fins of the first deflector ring do not contact the second deflector ring, an annular first cavity located between the axially adjacent radial fins and the second deflector ring (cavity between the first fin and radial inner surface of second deflector ring), the cavity being radially bound by the first and second deflector rings; wherein the second deflector ring has a continuously smooth inner lateral surface (e.g. the inner surface of the second deflector ring is continuously smooth) which radially faces the first deflector ring.

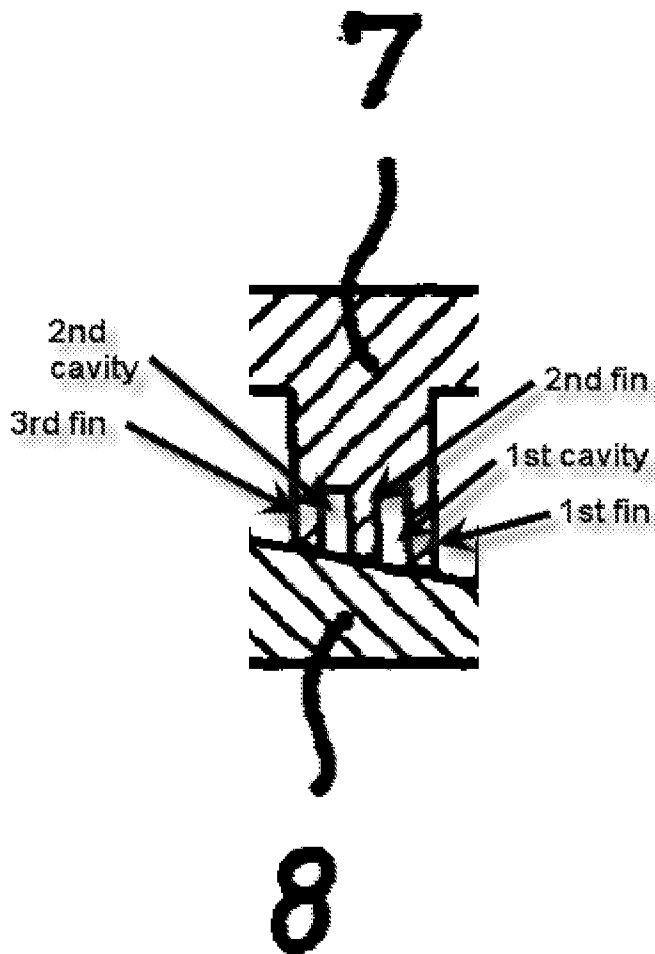
5. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Skumawitz et al (US. 20040119238).

Skumawitz discloses a seal comprising a first deflector ring (e.g. 7 or 8) comprising at least first and second radial fins (fins either side of 16) that are axially adjacent to one another, a second deflector ring (e.g. 7 or 8), the first and second deflector rings are arranged concentrically with respect to one another about a common axis of rotation and without contact with one another and wherein the radial fins of the first deflector ring do not contact the second deflector ring, an annular first cavity located between the axially adjacent radial fins and the second deflector ring (cavity between the first fin and radial inner surface of second deflector ring), the cavity being radially bound by the first and second deflector rings; wherein the second deflector ring has a continuously smooth inner lateral surface (e.g. the inner surface of the second deflector ring is continuously smooth) which radially faces the first deflector ring. The first deflector ring is placed on an outer side relative to the second deflector ring. The first radial fin (first fin directly under numeral 7) which is the longest and forms a first gap with the smooth surface of the second deflector ring. The second radial fin which is the second longest and forms a second gap

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with the smooth surface of the second deflector ring. The first gap being narrower than the second annular gap (this would be the case since the gap is conical and due to the smooth surface being inclined). The second annular gap opens out into a second cavity (this is the case since first cavity is formed between 1st radial fin and 2nd radial fin and a second cavity is formed between the 2nd radial fin and 3rd radial fin which is the shortest). The first deflector ring having a third radial ring (the shortest radial fin). A third gap is defined between the 3rd radial fin and the smooth surface. The second gap is narrower than the third gap (same reason why the first gap is narrower than the first annular gap). The second cavity and third cavity run on a curved path (this is the case since the cavities are annular). With regarding to claim 21 having collection channel, the prior art has the collection channel which is a portion of the cavities as described in the specification. A first cavity is defined between the first radial fin and the second fin, the bottom of the first cavity is at a distance from the central axis of 8). The width of the first cavity is less than the length of the first cavity.

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Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 22 and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hubbard et al (Us. 5,975,533) in view of Skumawitz et al (US. 20040119238).

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Hubbard discloses a seal comprising a first deflector ring (e.g. 146), a second deflector ring (e.g. 36), wherein the first and second deflector rings are arranged concentrically with respect to one another about a common axis of rotation and without contact with one another, the first deflector ring do not contact the second deflector ring, an annular cavity located between the first and second deflector rings (e.g. gap between 136 and 146) wherein the second deflector ring has a continuously smooth inner lateral surface (inner surface of the second deflector ring has a smooth surface) which radially faces the first deflector ring. The second deflector ring at least partially surrounds the first deflector ring on the radially outer side (e.g. portion 36 surrounds the second deflector ring), and in that at least one seal with at least one elastic sealing lip (e.g. 44) starts from the second deflector ring, the sealing lip being radially prestressed against a shaft (e.g. 30). The sealing lip is arranged axially next to the first deflector ring, which is seated on the shaft and delimits the seal on the axially outer side.

Hubbard discloses the invention substantially as claimed above but fails to disclose that one of the deflector rings having radial fins. Skumawitz discloses a labyrinth having two deflector rings where one of the ring having radial fins. It would have been obvious to one having ordinary skilled in the art at the time of the invention to have labyrinth seal formed by 136 and 146 to have radial fins as taught by Skumawitz to provide multiple chamber labyrinth seal (paragraph 0010 of Skumawitz).

Regarding claim 24:

Hubbard and Skumawitz disclose the claimed invention except that the sealing lip is at least 2.5 times as long as the sealing lip is thick at the thickest point transversely with respect to this length. Discovering an optimum range of a result effective variable involves only routine skill in

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the art. In re Kulling, 895 F.2d 1147, 14 USPQ 2d 1056. Without the showing of some unexpected result. Since applicant has not shown some unexpected result the inclusion of this limitation is considered to be a matter of choice in design. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the sealing lip is at least 2.5 times as long as the sealing lip is thick at the thickest point transversely with respect to this length as a matter of design choice and applicant has not provided any particular unexpected result for having this particular limitations.

8. Claims 2-4, 6-9 and 11-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skumawitz et al in view of Sweeney (US. 4,586,717).

Skumawitz discloses the invention substantially as claimed above but fails to disclose the orientation to be reversed (where the first deflector ring is on the outer side with the smooth surface and the second deflector ring is on the inner side with radial fins), which will also result in the third gap runs closer to the axis of rotation than the second gap, the second gap runs closer than the first annular gap, the second deflector ring is radially outer side, the first deflector ring is on the radially inner side, the first deflector ring has the radial fins and the second deflector ring has the smooth surface. Sweeney teaches to have radial fins on a first deflector ring (e.g. 31, figure 3), smooth surface on a second deflector ring (e.g. 34), the first deflector ring is on the outer side and the second deflector ring is on the inner side, figure 4 teaches to have the first deflector ring on the inner side and the second deflector ring on the outer side (as what applicant claim). It would have been obvious to one having ordinary skilled in the art at the time of the invention to have the orientation of the first deflector ring and the second deflector ring

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orientation of Shumawitz be reversed as taught by Sweeney, since changing orientation would be considered to be art equivalent (see figures 3-4 and column 1, lines 35-40 of Sweeney).

Regarding claim 3:

Skumawitz and Sweeney disclose the claimed invention except that the cavity presents a radially innermost bottom whose radial distance to the second deflector ring is at least 1.4 times the axial distance between the adjacent radial fins that bound the cavity. Discovering an optimum range of a result effective variable involves only routine skill in the art. In re Kulling, 895 F.2d 1147, 14 USPQ 2d 1056. Without the showing of some unexpected result. Since applicant has not shown some unexpected result the inclusion of this limitation is considered to be a matter of choice in design. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the first cavity have a width and length that defines the a radially innermost bottom whose radial distance to the second deflector ring is at least 1.4 times the axial distance between the adjacent radial fins that bound the cavity as a matter of design choice and applicant has not provided any particular unexpected result for having this particular limitations.

Regarding claim 7:

Skumawitz and Sweeney disclose the claimed invention except that that the incline surface of the smooth surface is at an angle of 70 to 85 degrees. Discovering an optimum range of a result effective variable involves only routine skill in the art. In re Kulling, 895 F.2d 1147, 14 USPQ 2d 1056. Without the showing of some unexpected result. Since applicant has not shown some unexpected result the inclusion of this limitation is considered to be a matter of choice in design. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the incline surface be at an angle of 70 to 85 degrees as a matter of design choice

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and applicant has not provided any particular unexpected result for having this particular limitations.

Response to Arguments

9. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vishal Patel whose telephone number is 571-272-7060. The examiner can normally be reached on 6:30am to 8:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer H. Gay can be reached on 571-272-7029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/V. P./

Primary Examiner, Art Unit 3676

/Vishal Patel/

Primary Examiner, Art Unit 3676